Small Business Innovation Research/Small Business Tech Transfer

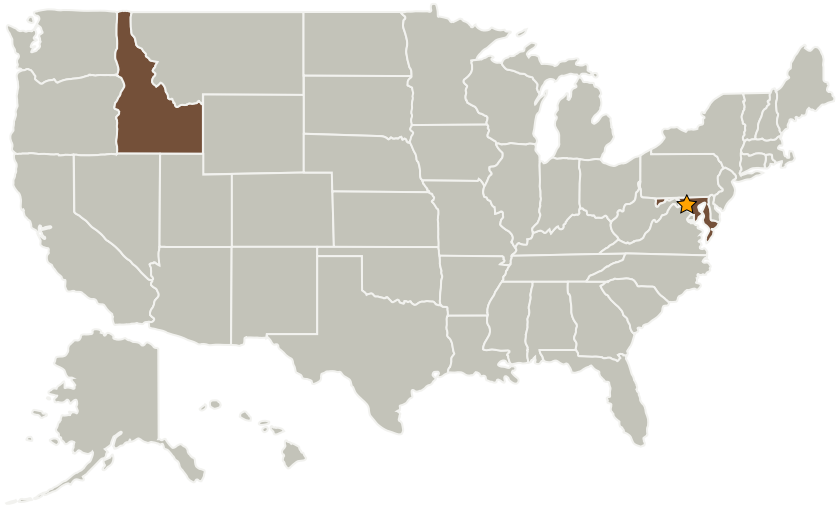
Flight Lossless Data Compression Electronics, Phase I

Completed Technology Project (2007 - 2008)

Project Introduction

The proposed work seeks to drastically increase the capability of the lossless data compression technology embedded in the currently used flight part known as USES (Universal Source Encoder for Space). USES met the CCSDS 121-0-B 1 recommendation. New advances to the lossless data compression electronic technology which advances the current flight electronics device: • Increase quantization levels to 32 bits; the current device supports only 15 bits. • Support multi-frequency simultaneous inputs, at least three to represent color inputs. • Increase speed from 20 MSamples/sec to 200 M Samples/sec • Realize in a radiation tolerant 0.25 micron CMOS process

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
ICs	Supporting Organization	Industry	McCall, Idaho

Primary U.S. Work Locations	
Idaho	Maryland

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Gary Maki

Technology Areas

Primary:

- TX02 Flight Computing and Avionics
  - TX02.2 Avionics Systems and Subsystems
    - TX02.2.9 Hardware Enabling Secure Avionics